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Remarks on the Essence of Silent Speed Reading

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Abstract

This paper investigates the essential factors involved in the process of silent speed reading as a skill, and focuses neurologically on the relationship between the brain and vision as a two-way channel in transmitting information without reference to the articulatory channel involved in speech or loud reading.

The study reveals that brain-eyes relationship in this kind of reading could suffice perceiving transmitted information from papers to be interpreted as comprehended information sought by readers without passing through the articulatory anticipation process.

Introduction:

Modern linguistic theories have given much attention to fundamental issues related to natural languages, in particular the three language components; syntax, phonology, and semantics. Under these components we find important terminologies which can't be defined or explained without empirical clarification based on direct objective observations (cf. Carroll et al., p. 134).

One thing we should keep in mind when any level of investigation of natural languages takes place is the distinction between' language acquisition 'and' language learning'. In acquiring a language (a native one) a person develops language mastery as a subconscious process mentally controlled in early childhood stages. In language learning, on the other hand, a person is concerned with building up conscious process of getting knowledge. In this respect the term "reading" is often associated with a type of literary knowledge obtained by going through any published or written materials. (ef. Schneider eat al., p.1). But in this study the term "reading" is utilized to cover a wider range than literary knowledge as long as this knowledge is obtained as a skill, not acquired.

The mechanism of Reading

In a very general framework, reading is the process of perceiving a written text in order to understand or comprehend its contents. The process can be done silently (which is our concern here), or could be oral reading which means the process of saying a written text; a process which can be done with or without understanding the contents.

"Different types of reading comprehension are often distinguished according to the reader's purposes in reading relative to the type of reading used". (Richard, J et., p. 238). And as long as the type of reading we are interested in is to obtain knowledge by visual apparatus with full awareness of the task, then this task could be mastered on different levels. Thus, reading is an art which could be directed to fulfill different purposes; accordingly it is a skill like painting which needs interests, good background and some knowledge to utilize.

Generally speaking, the study of what happens when language is visually perceived or processed is very recent; what is known about the operations and the processes anatomically involved (correlated relationships) remains little or

even obscure. Therefore, "the bulk of the enquiries is carried out by psychologists concerned less with the structure and function of eyes, and more with the models of the deeper ways in which the brain works on when it processes written language (Crystal, p.208). This process is considered the essences of reading.

The nature of Eye Movements and The Process of Reading:

The complexity of the physical nature of eye movements while seeing things attracted considerable attention to observe the relationship between the brain and the signals transmitted throughout eye movements while reading. Modern technology and medical researchers helped a lot in this respect. Simultaneous eye movements can be recorded by using various techniques, such as to attach a mirror to a contact-lens placed on the cornea. Then a beam of light reflected off the mirror is filmed. This method enabled researchers to show that "the eyes work together, and that when searching for an object they move in a series of rapid jerks", (ibid). It is also noticed that between each movement there is a period of relative short pause. What concerns us here is that during reading, the eyes don't follow the lines of letters or words in a smooth linear manner, but proceed in a series of rapid jerks known as "saccades" with relative stable periods of pauses called "fixations". It is found that a person usually makes three to four fixations per second (ibid).But the content of what one reads will definitely affect the rate and time consumed for the number of fixations; in addition to some inter language variations.

The Perceptual Span and Speed Reading:

The information stated above may lead us to the question: "How much linguistic knowledge can visually be perceived during each fixation?" without the help of modem technology the answer to this question becomes difficult if not impossible. Most information about the visual perception comes from using highly developed instrument called "tachistrocsope". Using this instrument enables specialists through some complicated out-puts, to know how the rate and duration of reading can be improved. Thus, subjects are presented with a briefly flashed sequence of letters, words, phrases, and the longer printed material; after that the subjects are tested in the degree of how much they comprehended of what they read.

The process of reading in the above sense is mostly psychological transaction between the reader and what is intended to be read. "Unless knowledge is involved as an aim in the reader's mind, little value ever arises

from the art of reading", (Schneider et al., p. 1). Thus, reading in its widely used range, is highly a personal matter, and the rewards are personal ones which vary on a wide scale of measurements. Therefore, appreciation comes from within the reader himself in silent reading while reading aloud appreciation comes from outside; that is the audience listening to what is read. For this reason the mechanism of reading, we are interested in here, is a type of silent reading called speed (rapid) reading, intended for the reader himself.

Any type of reading, essentially, involves appreciating the sense of what is written; we normally read for meaning. In the other words, it is the link between graphology (graphic symbols) and meaning resulting in some of semantic interpretations. This link and its results should be explained by any theory of reading.

The process of silent reading is accomplished without any vocal activities, which could simply be illustrated by **diagram (1)** shown below:

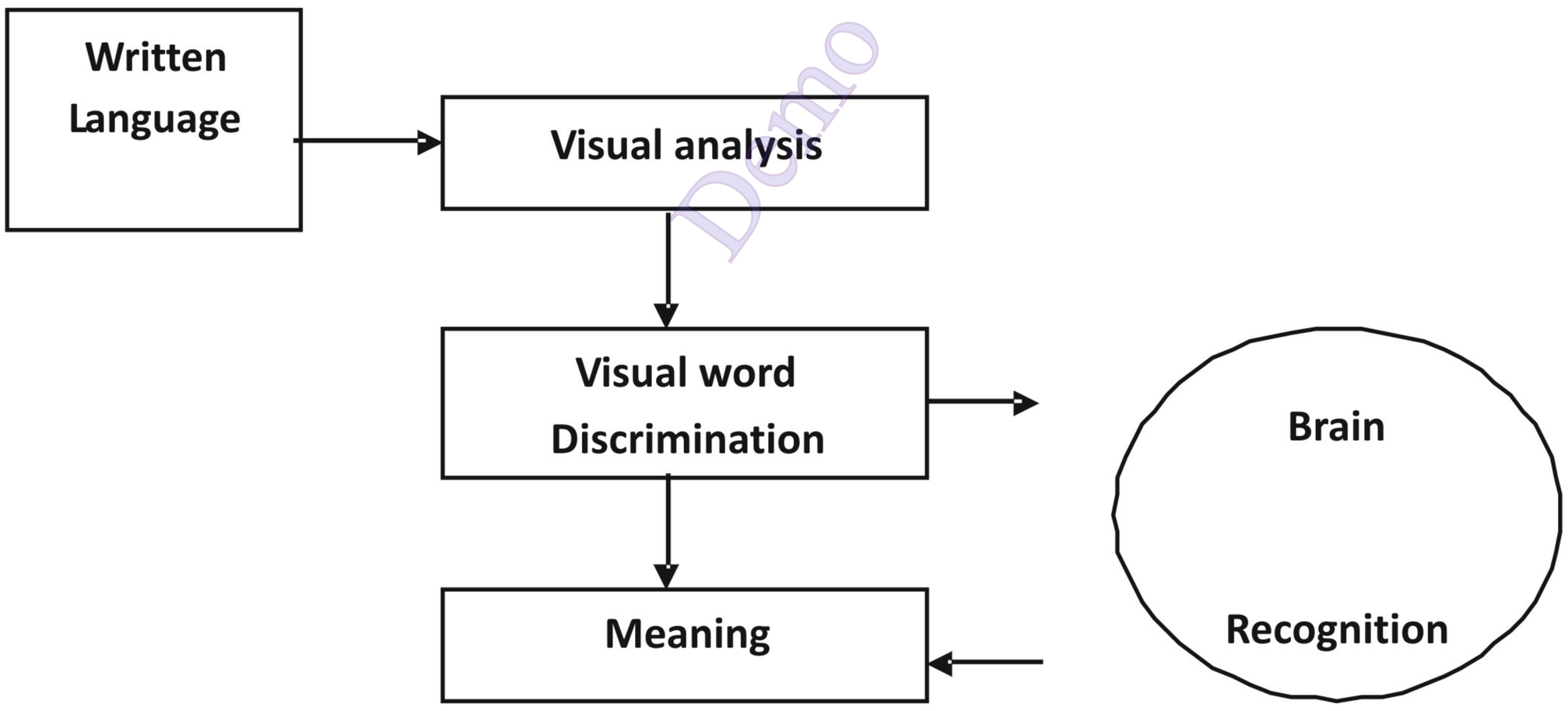

Diagram (1)
Reading by eye-brain only
(Silent reading)
(After Crystal P.208, with some modification)

Speed reading can be studied, as a subject, according to the perceptual span discussed above; plus, the rate of comprehending what is read is based on the variable degrees of high duration rates. This type of reading should exclude all other types of reading.

A word or two on aloud reading may help illustrating the mission to be accomplished by the brain, which differs drastically compared to horn speed reading. In this case, aloud reading needs some extra channel which chains time duration from eye movements when moving through a sequence of lexicon. In other words, the extra channel carries information (signals) from the brain to the articulators to produce utterances, and through this channel the brain (through the auditory system) receives the output of the utterances as acoustic signals carrying the information perceived visually through reading. The process of reading of this type can be illustrated by **diagram (11)** shown below:

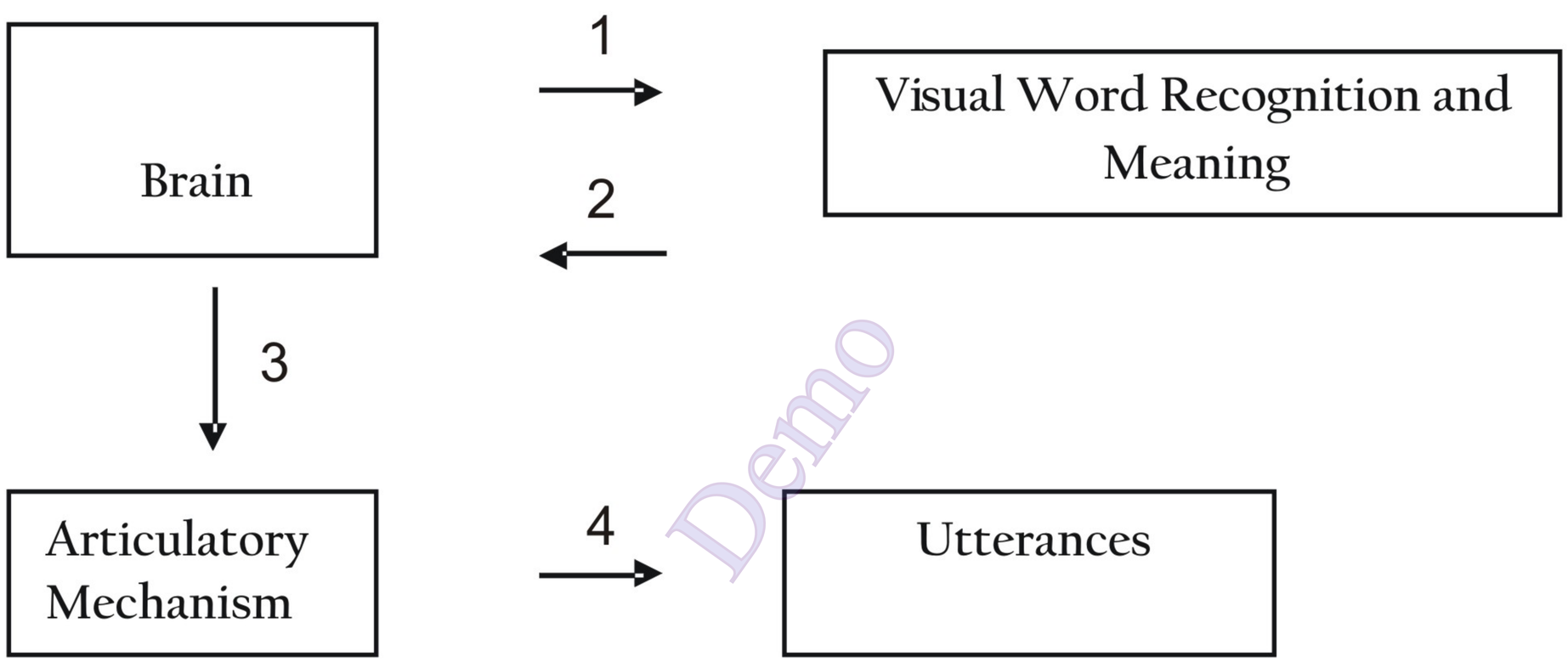

Diagram (11)
Reading Aloud

In silent reading (see diagram 1) most readers, if not all of them, place "target anticipation in the place of pronunciation". This means that the muscles keep on receiving orders from the brain to be activated; they do so, but without producing any noise (sounds). This also means that channel (3) of diagram (11) will keep on being activated without dominating channel (4) of the same diagram. As a result channel (4) becomes unproductive, and thus, completely dropped. This is one step forward in time saving which is our target in this respect. Compare the following diagram with **diagram (11)**:

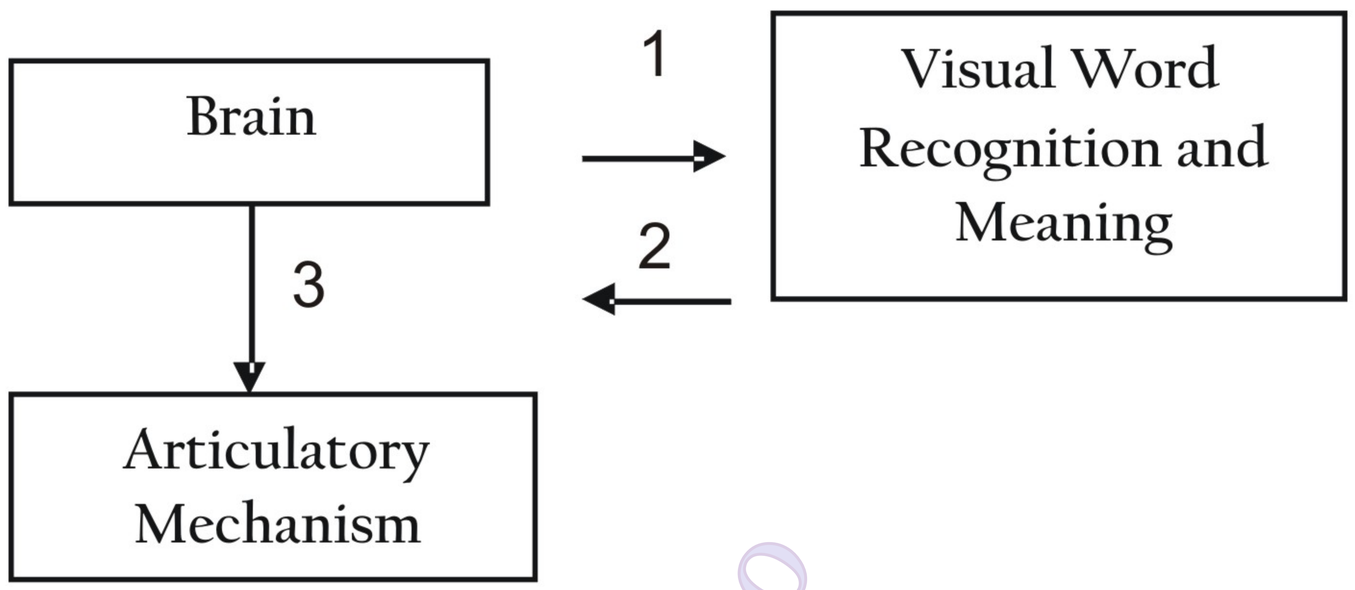

Diagram (111)
The output is only anticipation

We assume that by constant practicing on eyes-brain/ brain-eyes relation when reading, channel (3) of diagram (111) can also be eliminated. This process leaves two channels activated during silent reading as illustrated by **diagram (1V)**.

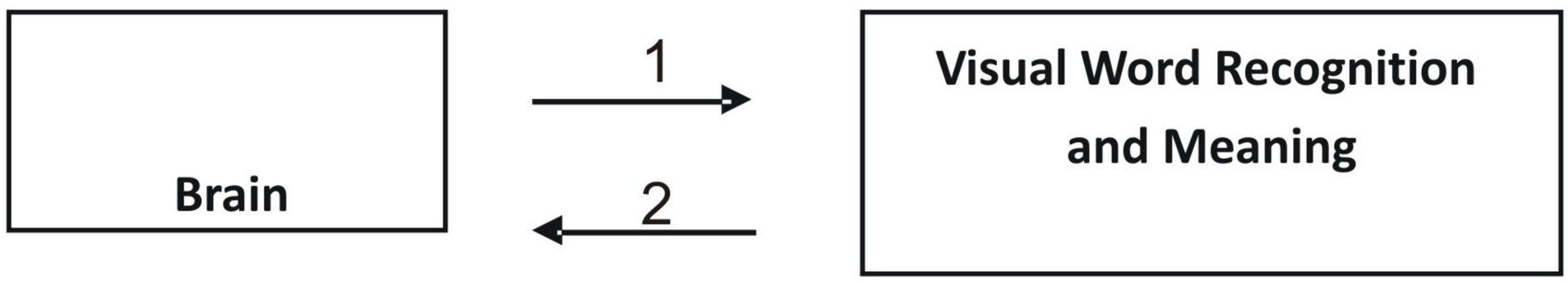

Diagram (1V)
The connection between the brain and the eyes

Speed reading focuses on time and knowledge (transmitted information) more than anything else. Therefore, we can benefit from the brain-eyes, eyes-brain relationships to shorten time and increase information

while reading silently takes place, depending wholly on the speed of eye movements and the brain readiness.

As highly developed skill, silent speed reading is simply the output of extensive eye movement training and tremendous numbers of stored lexical items and their different syntactico-semantic interpretations. In brief, the whole process depends on activated short and long term memory where structured lexicon, events and exhaustive training and practice compose the main components of reading in general and silent speed reading, in particular.

To control any type of skill one needs spontaneous training and practice, as drills, with a series of properly designed practicing procedure accompanied by patterns of drilling used intensively. This process will definitely lead to simultaneous and systematic eye movements channeled with brain signaling activities. We think that the fundamental issues here should be focusing on the fruitful results of eye-movements directed vertically on the middle top line of the page moving down while the vision activities spread to both angles of the eyes to cover up the lines on both horizontal directions to capture the chains of words like looking at a picture to grasp the features of its dimensions. At the same time the controlled power of vision moves down-wards vertically till the bottom of the page where the last line occurs.

The following diagram illustrates the eye-movements and vision activities when silent speed reading takes place:

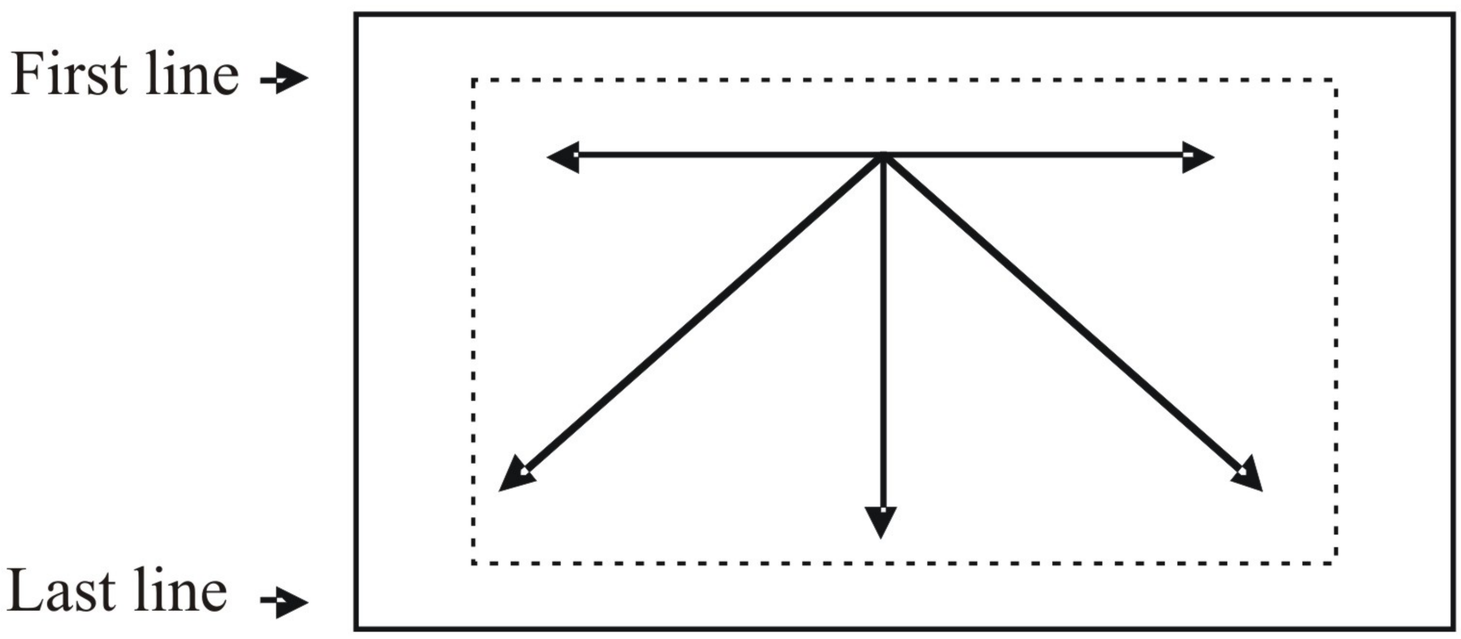

Diagram (V)
Eye focus and movements in silent speed reading

The eye- movements and vision activities depend on the least time utilized-consumed to cover maximum number of words per page, measured by seconds or milliseconds.

Conclusion:

As shown in diagram (1V), the brain should avoid sending signals to the articulators to start enunciating what the eyes visualize while moving through the prints (words and sentences). In other words, channel (3) should be illuminated by training and practice. Thus, emphasis should be put on how one could avoid the process of anticipating the intended targets of the articulators not to be activated, while increasing the speed of eye movements in the process of speed reading. We think that, as long as brain-eyes relationship is involved in reading silently, then it is possible to skip many unwanted procedures while silent reading takes place, and to keep only this essential relationship in the process of being activated.

To speed up the procedure of transmitting the signals between the eyes and the brain, the latter should be our point of focus in controlling, and then speeding the eye movements simultaneously with increasing the amount of knowledge obtained in this process. In this respect all possible techniques based on modern technology, in particular electronic equipments, should be utilized to help training to speed up the rate of this type of reading.

Giving and receiving information to and from eyes while moving through prints, the brain, for interpretation gets more information of what is to read. This information could be transmitted as signals in the form of words, single or in sequences to carry the essential information needed at a time; mostly connected with events. Space here could be of less value if the passage or the lines contain no key elements leading to the events which carry the information to be obtained. Thus, the eyes will be ordered to skip, words, lines, paragraphs, and even a page or pages if the information needed is not there.

To conclude, the above discussion leads us to a very essential component in silent speed reading in particular, and reading as a whole in general; that is 'time'. To obtain the utmost information in less time, the eyes receive signals (orders) from the brain to perceive visually the utmost linguistic material during each fixation. This can not be done unless the person (the reader) is knowledgeable in the number of lexicon (words and their meanings), plus some syntactic familiarity. Thus, one should have the ability of text interpretation experience which can not be controlled without effort and studious, careful practice.

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